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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,882

09/12/2005

Christof Holberg

60282.00223

1670

32294

7590

05/13/2009

SQUIRE, SANDERS & DEMPSEY L.L.P.  
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VIENNA, VA 22182-6212

EXAMINER

CHAWAN, SHEELA C

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

05/13/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/516,882	<b>Applicant(s)</b> HOLBERG, CHRISTOF	
	<b>Examiner</b> SHEELA C. CHAWAN	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***DETAILED ACTION***

***Response to Amendment***

1. Applicant's amendment filed on 2/2/09 has been entered and made of record.  
Claims 16- 29, are pending in the application.

***Response to Argument***

2. Applicant's arguments see page 10-12, of the remarks, filed 12/22/08, with respect to claims 16-29 have been fully considered and are persuasive. The rejection of claims 16-29 has been withdrawn.

Applicant's arguments see page 10-12 of the remarks, filed 2/2/09, with respect to the rejection of claims 16-29 under 102(b) rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, a new ground of rejection has been established in view of the newly found reference to Edelsbrunner et al., (US.6,996,505 B1).

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 16 - 20 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit<sup>1</sup>, relying upon Supreme Court

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<sup>1</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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precedent<sup>2</sup>, has indicated that a statutory “process” under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the “machine or transformation test”, whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590”). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor positively tie to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16- 29, are rejected under 35 U.S.C. 102(b) as being anticipated by

Edelsbrunner et al., (US.6,996,505 B1).

As to claim 16, Edelsbrunner discloses a method of creating a three-dimensional model of a tangible existing object (abstract), the method comprising:

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<sup>2</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk*

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digitizing the object to create a polygon mesh of the object (fig 1, column 7, lines 52-67, column 8, lines 13 – 27);

breaking the polygon mesh into separate bilinear NURBS patches (column 9, lines 15- 55); and

uniting the bilinear NURBS patches to form a continuous surface composite of the bilinear NURBS patches to obtain a surface model or solid model of the object (column 8, lines 13-27, 49- 65 column 9, lines 1- 55, column 10, lines 49- 67, column 11, lines 1- 17, 55- 67 , fig 1,fig 2 and fig 3) .

As to claim 17, Edelsbrunner discloses a method according to claim 16, wherein the step of digitizing comprises obtaining the polygon mesh from point cloud data of the object (fig 1 element 100, and fig 2, element 200, column 7, lines 52- 56).

As to claim 18, Edelsbrunner discloses a method according to claim 16, wherein the breaking step comprises breaking the polygon mesh into triangular bilinear NURBS patches (column 7, lines 52- 67, column 8, lines 13 – 27, column 9, lines 15- 55).

As to claim 19, Edelsbrunner discloses a method according to claim 16, further comprising the step generating a finite element model from the surface model or solid model (fig 3).

As to claim 20, Edelsbrunner discloses a method according to claim 16, wherein said uniting comprises stitching the bilinear NURBS patches together (column 8, lines 13-27, 49- 65 column 9, lines 1- 55, column 10, lines 49- 67, column 11, lines 1- 17, 55- 67 , fig 1,fig 2 and fig 3).

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As to claim 21, (note, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 16).

As to claim 22, Edelsbrunner discloses an apparatus according to claim 21, wherein the data processor generates a finite element model of the object from the surface model or solid model (fig 1,fig 2 and 3, column 8, lines 13- 24, 49- 60).

As to claim 23, Edelsbrunner discloses an apparatus according to claim 21, wherein the data processing steps are executed in the data processor by software routines( column 9, lines 15- 55) .

As to claim 24, Edelsbrunner discloses an apparatus according to claim 21, wherein said uniting comprises stitching the bilinear NURBS patches together (column 8, lines 13-27, 49- 65 column 9, lines 1- 55, column 10, lines 49- 67, column 11, lines 1- 17, 55- 67 , fig 1,fig 2 and fig 3).

As to claim 25, Edelsbrunner (note, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 16).

As to claim 26, Edelsbrunner discloses a computer program according to claim 25, which creates the separate bilinear NURBS patches by breaking the polygon mesh into the bilinear NURBS patches through conversion into IGES` format (column 9, lines 1- 55).

As to claim 27, Edelsbrunner discloses a computer program according to claim 26, wherein the polygon mesh converted into the IGES format comprises exclusively surface elements of IGES entity #128 (column 9, lines 1- 55).

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As to claim 28, Edelsbrunner discloses a computer program according to claim 25, which generates a finite element model of the object from the surface model or solid model through CAD-FEM coupling (fig 1,fig 2 and 3, column 8, lines 13- 24, 49- 60).

As to claim 29, Edelsbrunner discloses a computer program according to claim 25, wherein said uniting comprises stitching bilinear NURBS patches together (column 8, lines 13-27, 49- 65 column 9, lines 1- 55, column 10, lines 49- 67, column 11, lines 1- 17, 55- 67 , fig 1,fig 2 and fig 3) .

***Other prior art cited***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Krishnamurthy (US. 6,256,038 B1) discloses parameterized surface fitting technique having independent control of fitting and parameterization.

***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Friday 8.30 am - 5.00 pm and every Wednesday work from home. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheela C Chawan/

5/8/09

Primary Examiner, Art Unit 2624



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